## Subject Index

(* Book review)


AAA amino acid list 66
Agarose gel electrophoresis 239
Alanine:2-oxoglutarate aminotransferase (EC 2.6.1.2) 196
Alanine aminotransferase 196
Allosteric enzymes 3
Amylase 250
Amylopectin 250
Arginase assay 76
Ascorbic acid 110
Assessment 229

Bacteria 239
Basic techniques* 34
Bioinformatics* 268
Bioinformatics 167
Biology Student Workbench (BSW) Project 165
Biomolecules 60
Biotechnology 206
Breast cancer 234
BSW see Biology Student Workbench Project

Carbohydrate metabolism 199, 245
Case studies* 274
Cells* 175
Chemistry* 279
Chitinase activity 144
Communication skills 186
Comparative metabolism 245
Computer simulations, phosphofructokinase 3
Computer-aided learning 137
Concerted transition 3
Control flux 142
Controls 76
CTAB 21
Cysteine protease 169

Demonstrations 60
Designer metabolic pathways 147
Diabetes mellitus 199
Dialogues 225
Dictionary* 89
DNA* 213
DNA damage 21
DNA electrophoresis 71
DNA sequencing 60
DNA-protein interactions* 210
Drug development* 131

Education 188, 222
Electrophoretic transfer 250
Endocrinology 234
Energy dissipation 142
Enzyme activity 196
Enzyme assays 76, 144, 250
Enzyme kinetics 3, 199
Enzyme reagent kits 147
Enzymes* 36
Enzymology* 33
Estrogen receptors 234Ethanol 105
Ethics 225
Experimental design 10

FISH see Fluorescence in situ hybridization
Flavohemoglobin 123
Flexible delivery 229
Fluorescence in situ hybridization (FISH) 60
Fluorescence spectroscopy 60
Free energy 101, 142

Genes* 36
Genomic DNA 21
GFP see Green fluorescent protein
[1-$^{14}$C]-glucose 245
Glucose-6-phosphatase 199
Grapes 144
Green fluorescent protein (GFP) 60

Handling conditions 21
Hanseniaspora uvarum 245
Heme 123
Hemoglobin 123
Hormone-dependent cancers 234
Human disease 188
Human rhinovirus 3C cysteine protease 169
Hydration 54
Hydrogen bonding 54

Independent projects 10
Industry 257
Insects 196
Interactive learning tools 163
Internet* 269
Investigative laboratory 199
Iodine 110
Irreversible thermodynamics 142

Kinetics
  glucose-6-phosphatase 199
  phosphofructokinase 3
*Klebsiella opiculata* 245

Laboratory experiments 10
Learning support 229
Lectures 222
Life sciences* 89
Light absorption 60
Light emission 60
Long-distance running* 217

Major histocompatibility complex (MHC) 137
Mass spectometry* 130
Mathematics* 214
Medical school 188
Medical students 147
Membrane transport* 173
Metabolic flux 101
Metabolic pathways 42, 142, 147
Metabolic reactions 101
Metabolism* 217
Metabolism 147, 229, 245
Metal ions* 275
MHC *see* Major histocompatibility complex
Microsatellite analysis 71
Mini-proteins 16
Mitochondria* 216
Molecules* 275

Multimedia 262
Myoglobin 183

Nerve terminals 105
Neurochemistry 105
Neurotoxicity 105
Nitric oxide-detoxification 183
Nucleic acids, hydration 54
Nutrition 229

Oral communication 98
Oxidation-reduction titration 110

Pathology • 131
Pathophysiological mechanisms 188
PBL *see* Problem-based learning
PCR *see* Polymerase chain reaction
Pentose phosphate pathway 179
PFK *see* Phosphofructokinase
Phosphofructokinase (PFK) 3
Plant DNA 21
Plants • 37
Polyacrylamide gels 250
Polymerase chain reaction (PCR) 71, 239
Polymorphism 71
Poster handouts 98
Powerpoint presentations 229
Premedical education 188
Problem-based learning (PBL) 80, 204, 255
Protein architecture • 129
Protein folding 45
Protein isolation • 131
Protein purification • 211
Protein redesign 16
Protein science • 36
Protein stability 16
Protein structure • 33
Protein-ligand interactions • 174
Protein-protein recognition • 211
Proteins • 36
Proteins, hydration 54
Proteolytic enzymes • 176
Proteomes • 130
Pseudo-enzymatic activity 183

Quenching 60

Reaction intermediates 31
Restriction mapping 239
Reverse transcriptase-transcription polymerase chain reaction (RT-PCR) 234
Revision bingo 193
RT-PCR *see* Reverse transcriptase-transcription polymerase chain reaction

*Saccharomyces cerevisae* 245
Short tandem repeat sequence (STR) analysis 71
Simulations, phosphofructokinase 3
Skill development 98, 186
Skill sets 222
Solvent relaxation 60
Southern hybridization 239
*Spodoptera frugiperda* 196
Sports performance • 217
Starch 250
Stem cell biology • 268
Stereochemistry • 216
STR *see* Short tandem repeat sequence analysis
Structure
  hemoglobin 123
  human rhinovirus 3C cysteine protease 169
  mini-proteins 16
  water 54
Structure-function relationship 137
Students 10, 50, 98, 147, 188, 257
Syllabus 222
Symmetry 3
Synaptosomes 105

Teaching 222, 225
Textbooks • 33, 126, 209, 266, 270, 274
Thermodynamics • 272, 273
Thermodynamics 45, 101, 142
Transaminase 196
Troubleshooting 10
Truncated hemoglobin 123
Trypsin(ogen)-like fold 169

Undergraduate research 10
Urease 239

Velocity 3
Virtual laboratories 160, 163
Vitamin C 110

Water 54
Web technology 50, 165, 229
WebCT 229
Websites • 28, 86, 117, 155, 264
Wine yeasts 245
Workforce quality 206

X-ray crystallography 31

## Author Index


Abu-Salah K.M. 218
Aledo, J.C. 142
Amagai, S. 163
Anthony-Cahill, S. 45
Ascenzi, P. 16, 31, 123, 169, 183
Ataur Rahman, M. 80

Banerjee, B.D. 137
Bannister, W.H. 281
Baral, N. 137
Barton, P.A. 196
Bell, E. 104
Bolognesi, M. 31, 123, 169
Bourque, J. 257
Boyer, R. 211
Boyle, J. 175
Brunori, M. 183
Byrne, N.D. 144

Campbell, P.N. 212
Caspers, M.L. 225
Chandar, N. 234
Chaplin, M.F. 54
Ciancaglini, P. 110
Cooper, S. 167
Cordon, A. 163
Cornely, K. 173
Costa, M.J. 98
Couderc, B. 71
Croney, J.C. 60
Cunha, R.A. 105

Daghastanli, K.R. 110
Dahms, A.S. 206, 257
Dahms, S. 121
Diwan, J. 3
Diwan, J.J. 50
Duranti, M. 21
Duxbury, M. 144

Edwards, R.A. 101
Erwin, H. 196

Fay, M.J. 234
Feldberg, R.S. 222
Foster, J.D. 199
Frey, P.A. 33

Giles, K. 33
Gillett, M.P.T. 147
Glew, R.H. 188
Grbin, P.R. 245

Henly, D.C. 229
Howland, J.L. 36, 217
Huda, N. 80

Jakobsson, E. 165
Jaleel, A. 80
Jameson, D.M. 60

Kalsher, M.J. 50
Koner, B.C. 137
Kuehn, B.J. 199

Lajoie-Mazenc, I. 71
Lamsal, M. 137
Learmonth, R.P. 60
Liu, D. 163
Lu, P. 210
Lydon, J. 214

Mathews, C.K. 131
Mezl, V.A. 66
Milani, M. 123
Mulimani, V.H. 250

Nichol, A.W. 245
Nicholson, D.E. 42, 179
Noor, S. 76

Olmschenk, S.M. 199
O'Leary, M. 41

Parslow, G.R. 26, 85, 86, 89, 90, 116, 117, 154, 155, 262, 264, 280
Pesce, A. 123
Polticelli, F. 16, 31
Provost, J.J. 199
Punekar, N.S. 76

Qarslow, G.R. 85

Raineri, D.M. 160
Raybaudi-Massilia, G. 16
Reed, K.E. 239
Reid, A.E. 229
Rhodes, C. 158
Richardson, J.S. 129
de Ridder, G. 196
Roberts, L.M. 10
Roberts-Kirchhoff, E.S. 225
Roy, H. 3

Santos, H.L. 110
Scarafoni, A. 21
Scholnick, D.A. 199
Segel, I.H. 3
Segel, L.D. 3
Sharpe, N. 144
Short, T.W. 37
Smith, C.A. 152
Spallarossa, A. 169
Steel, C.C. 245
Sudarshana, S. 76

Thedei Jr., G. 110
Thippeswamy, S. 250
Traver, H.A. 50

Uzman, A. 35, 95, 126, 213

VanderJagt, D.L. 188
Vella, F. 36, 133, 135, 272
Viselli, S.M. 234
Voet, J.G. 136, 221

Wallert, M.A. 199
Warden, J. 50
Westhead, D. 268
White, H.B. 24, 79, 115, 152, 204, 255
Willmott, C.J.R. 193
Wolfson, A.J. 176
Wood, E.J. 89, 90, 128, 130, 132, 209, 216, 219, 266, 268, 269, 270, 281, 281
Woodin, T.S. 93, 158

Zimmerman, J. 174, 186